CESPD-PD-SO 24 February 2006

MEMORANDUM FOR Chief, Program Support Division

SUBJECT: 2006 Midwinter Bald Eagle Survey at Corps of Engineers Projects in the Western United States

INTRODUCTION

Each January, the Snake River Field Station (SRFS) of the U.S. Geological Survey (USGS) coordinates the Midwinter Bald Eagle Survey, in which several hundred individuals count eagles along standard, non-overlapping survey routes. The 2006 Midwinter Bald Eagle Survey was held from 4-18 January 2006 with target dates of 13 and 14 January.

Nationwide counts of eagles were coordinated by the National Wildlife Federation from 1979 until 1992, when the Raptor Research and Technical Assistance Center (now SRFS) assumed responsibility for overseeing the count. Initial objectives of the survey were to establish an index to the total wintering Bald Eagle population in the lower 48 states, to determine eagle distribution during a standardized survey period, and to identify previously unrecognized areas of important winter habitat.

Beginning in 1984, National Wildlife Federation officials asked participants in each state to count eagles along standard routes to provide data on count trends. Standard survey routes were defined as clearly described areas where eagles had been observed in the past. Federation guidelines stipulated that standard surveys be conducted by the same number of experienced observers using the same method (e.g., fixed-wing, helicopter, boat, or vehicle) at approximately the same time of day each year.

Observers conduct surveys on standard routes during the first 2 weeks of January each year, usually on 1 of 2 target days. Most survey participants are employees of state or federal conservation agencies, but private volunteers also participate in the survey. Coordinators from each state are responsible for organizing local counts, enlisting survey participants, and compiling data to eliminate duplicate sightings and overlapping routes.

Because Bald Eagles congregate in winter near lakes, reservoirs, and rivers, many Corps of Engineers projects around the country, including the western states within the South Pacific Division (SPD), provide excellent opportunities to view wintering eagles. In January 2006, Park Rangers at several Corps projects in SPD participated on the Midwinter Bald Eagle Survey by establishing new standard survey routes, or counting eagles along established survey routes.

Following is a brief summary of their surveys (See Table 1).

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RESULTS

San Francisco District

Both Lakes Mendocino and Sonoma established new standard survey routes in 2006. One adult Bald Eagle was counted at Lake Mendocino on 9 January during the survey, but several eagles were observed on the lake in December 2005, including two adults and one immature eagle. Lake Sonoma was surveyed on 13 January, counting two adult Bald Eagles and two Golden Eagles.

Lake Sonoma supports one known pair of breeding Bald Eagles, which may have been the eagles counted during the winter survey.

Sacramento District

Five Corps projects participated in the 2006 survey, including Black Butte Lake, Hensley Lake, Eastman Lake, New Hogan Lake, and Englebright Lake.

Park Rangers at Black Butte Lake counted one adult Bald Eagle on 13 January, while rangers at Hensley Lake counted three eagles on 15 January on their established route, including two adults and one immature. The established route at Eastman Lake on the Chowchilla River was surveyed on 7 January, also counting two adult Bald Eagles and one immature. Winter counts at Eastman and Hensley are comparable with past years (1988-2004, 0-3 eagles).

Both Eastman Lake and Hensley Lake also support pairs of nesting Bald Eagles.

Hew Hogan and Englebright lakes were both surveyed by Corps rangers on 13 January. No eagles were counted at Hew Hogan, while one immature Bald Eagle was counted at Englebright. Previously, Engelbright Lake was surveyed by PG&E personnel in 1988, 1990-91, 1997 and 1999 counting 1-12 eagles.

U.S. Forest Service personnel surveyed Pine Flat Reservoir from 1990-91, 1993-2001, and 2003-04, counting 0-19 eagles.

Stanislaus River Parks (Lower New Melones Project) was surveyed in 1991, and 1996-2005 by Audubon Society and U.S. Bureau of Reclamation personnel, counting 1-37 eagles.

Wintering eagles have also been observed at Lake Success, and at Lake Kaweah since 1978, with six adults counted in the winter 1999-2000.

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Los Angeles District

Arizona Game & Fish Department (AGFD) staff survey Alamo Lake on the Bill Williams River and Painted Rock Dam on the Gila River. Alamo has been surveyed every winter since 1992, with 1-4 eagles counted. AGFD staff counted three adult Bald Eagles in January 2006. Painted Rock was surveyed from 1992-2004 with 0-2eagles counted. Because of low eagle use, Painted Rock Dam was eliminated from the 2006 survey.

Alamo Lake also supports nesting Bald Eagles at two known breeding areas.

Albuquerque District

Two Corps projects in northern New Mexico participated on the 2006 survey, including Cochiti Lake on the Rio Grande and Abiquiu Lake on the Rio Chama. Park Rangers at Cochiti Lake counted five adult Bald Eagles and one immature eagle on 13 January, as well as five adult Golden Eagles during the survey. Rangers repeated the survey on 14 January with similar results, counting five adult Bald Eagles and six Golden Eagles. At Abiquiu Lake, rangers counted six Bald Eagles on 7 January, including five adults and one immature.

Other Corps projects that support wintering Bald Eagles include John Martin Reservoir on the upper Arkansas River in southeastern Colorado. On 29 December 2003, as many as 49 adult Bald Eagles and 31 immature eagles were counted on the lake. Trinidad Lake in southern Colorado, Conchas Lake on the Canadian River in northeastern New Mexico, and Santa Rosa Dam and Lake on the Pecos River have also reported Bald Eagle use during the winter. Conchas Lake was surveyed from 1990-96, counting 5-58 Bald Eagles during the midwinter survey.

DISCUSSION

Midwinter count data from 1986-2000 were evaluated by USGS to assess count trends. The analysis was based on 101,777 observations of eagles during 5,180 surveys of 563 routes in 42 states. Both regional and route-level trends were determined using a hierarchical mixed model. Throughout the survey area, counts increased an estimated 1.9% per year from 1986-2000. Sixty-five percent of routes showed increasing trends, and 35% showed decreasing trends during the 15-year period. The overall increase was statistically different from zero, but count trends varied by region.

Model-based estimates of counts in the Northeast increased approximately 6% per year, whereas those in the Southeast, Southwest, and Northwest were essentially unchanged. The Northeast region had the highest proportion of routes with increasing trends (90%).

Northern states had a higher proportion of routes with increasing trends (73%) than southern states (58%); and eastern states had more routes with increasing trends (78%) than western states (55%).

As a large-scale volunteer effort that developed over many years, the Midwinter Bald Eagle Survey has inherent problems. Many reports received are not used because of incomplete documentation or inconsistent survey methods. Because survey routes were not randomly selected, the standard routes used in the USGS analysis may not be representative of the contiguous 48 states. Findings are likely biased towards states and portions of states where agencies and individuals were committed to long-term, consistent data collection.

However, winter counts are assumed to be a reasonable index to eagle abundance at the areas surveyed during the January sampling period. Trend analyses based on counts as indexes are valid only if the proportion of the population sampled is constant from year to year. The ability to detect eagles on survey routes may vary with many factors, including weather, topography, and vegetation, and errors in detectability are assumed to be consistent from year to year on a given survey route. Including only those surveys that covered the same area, using the same transportation method each year, controls variation in detectability. Varying ability of individuals to detect and identify bald eagles is likely not as much of a problem in Midwinter Bald Eagle Surveys as it is in Breeding Bird Surveys and other singing-bird surveys.

The annual midwinter survey represents a unique source of long-term, baseline data on Bald Eagles, still listed as a threatened species under the Endangered Species Act (ESA) of 1973, as amended. Unlike nesting surveys, it provides information on both breeding and nonbreeding segments of the Bald Eagle population in the lower 48 states at a potentially limiting time of year. It also provides an opportunity to monitor modifications or threats to habitat at important wintering areas. The count has become a tradition that will likely continue in many states. In addition to providing information on eagle trends, distribution, and habitat, the count has helped to create public interest in Bald Eagles and their conservation.

RECOMMENDATIONS

Given its importance as a keystone species for monitoring ecosystem health, and the keen public interest as our national symbol, Park Rangers and others at Corps of Engineers projects in SPD should be encouraged to establish standard survey routes and participate in the annual Midwinter Bald Eagle Survey in cooperation with their state coordinators. The data collected will also be useful for managing eagle habitat at these operating projects, facilitating compliance with the affirmative obligations of the ESA.

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The USGS SRFS has recently asked the Corps of Engineers, SPD to assume the role and responsibilities and serve as National Coordinator for the Midwinter Bald Eagle Survey, starting in 2007. U.S. Army Engineer R&D Center (ERDC) staff support and encourage SPD assuming this responsibility, and are willing to provide any necessary logistical and technical assistance. SPD should further investigate this unique opportunity and pursue a partnership with USGS and ERDC to assume the national coordination responsibility in January 2007.

ACKNOWLEDGMENTS

Many Park Rangers at Corps parks and lakes were critical to the success of the 2006 Midwinter Bald Eagle Survey in SPD, including Roy Cameron, Greg Carpenter, Brett Carre, Janet Cook, Eric Garner, Tim Golden, Joe Lishka, Bill Miller, Barry Wendorf, and many others too numerous to name individually. I owe them all a great deal of gratitude for their dedication and interest.

Wade L. Eakle, M.S., C.W.B.
Ecologist & Regulatory Program Manager

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Table 1. Results of 2006 Midwinter Bald Eagle Survey at select Corps of Engineers Lakes and Parks in the South Pacific Division.

Lake	Date	Adult BE	Imm. BE	Golden Eagle	Osprey
Mendocino	1/9	1	-	-	-
Sonoma	1/13	2	-	2	3
Black Butte	1/13	1	-	-	-
Hensley	1/15	2	1	-	-
Eastman	1/7	2	1	-	-
New Hogan	1/13	-	-	-	-
Englebright	1/13	-	1	-	-
Alamo	1/12	3	-	-	-
Cochiti	1/13	4	1	5	-
Cochiti	1/14	5	-	6	-
Abiquiu	1/7	5	1	-	-

BE = Bald Eagle; Imm. = Immature.